REMARKS

By this document, no amendment to the claims was made. Thus, Claims 1-5 remain pending and are presented for further examination.

I. Discussion of Rejection of Claims 1-5 Under 35 U.S.C. § 103(a)

On pages 1-2 of the Office Action, the Examiner rejected Claims 1-5 for being unpatentable over U.S. Patent Pub. No. US2002/0102073 A1 to Shirakwa in view of US2002/0197023 A1 to Serizawa with respect to Claims 1, 2, 4, and 5, and rejected Claim 3 further in view of U.S. Patent No. 5,923,805 to Anderson et al. In rejecting the claims, the Examiner re-stated substantially the same arguments as those presented in a previous Office action dated April 10, 2003. In response to the Examiner's arguments, the Applicant resubmits and incorporates by reference arguments presented in Applicant's response dated June 24, 2003.

Additionally, the Applicant respectfully disagrees with the Examiner's findings and determination that Claims 1-5 are unpatentable in view of the reasons below, which are presented in reply to the Examiner's arguments in response to Applicant's arguments beginning on page 3 of the Office action.

A. There is No Motivation to Combine the Teachings of Shirakawa and Serizawa

In response to Applicant's arguments in the remarks dated June 24, 2003, the Examiner stated:

> However, the combination of the two references are [sic] clear to one skilled in the art. Shirakawa and Serizawa both disclose an optical connector with a receptacle and plug connection. Furthermore, Shirakawa and Serizawa's connectors both include a light emitting and receiving element within the housing for improved efficiency and productivity. Since both Shirakawa and Serizawa disclose receptacle plug type connectors with similar structures, it would have been obvious to combine the two references. *O.A. at pp. 3-4.*

The Applicant reminds the Examiner that a showing of a suggestion, teaching or motivation to combine the prior art references is an essential component of an obviousness holding. *See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000).* Here, the Examiner merely indicated that Shirakawa and Serizawa both disclose similar subject matter relating to optical connectors and

that the combination is "clear" to one of ordinary skill in the art. The Applicant submits that the mere presence of similarities between references does not satisfy a showing of a motivation to combine as required by law. Further, the Examiner's assertion that the combination of such teachings is "clear" fails to satisfy the Examiner's burden in sustaining the claim rejections. The Examiner can satisfy the burden of showing obviousness of the combination only by showing some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. *In re Fitch, 972 F.2d 1260, 1265, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992).* The Applicants submits that the Examiner failed to present such objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art.

As noted in the specification of the present application, the inventor recognized benefits from selecting a converging lens with such claimed characteristics for his invention. For example, when optical communication occurs within a vehicle, a coupling loss is caused in a connecting portion of an optical fiber and bending loss is caused in a bending portion of the optical fiber. *Spec. at pp. 4-5.* When such loss is sufficiently large, little or no light may be transmitted from a light-transmitting element to a light-receiving element. *Id. at page 5.* The inventor solved this problem by, at least in part, arranging a convergent lens 8 in a receptacle connector 1. *Id. at page 10 (see, e.g., Fig. 1).* The convergent lens is configured to converge light from the light emitting element 10 so as to provide an incident numerical aperture that is smaller than the numerical aperture of the optical fiber. On the other hand, Serizawa discloses a collimator lens that is incapable of providing the benefits of the convergent lens of Claim 1, because the collimator lens is configured to have a numerical aperture of the sleeve 25 that is larger than that of the optical fiber 40. There is no objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. *See, In re Fitch, 972 F.2d 1260, 1265, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992).*

B. Combination of Shirakawa and Serizawa Fails to Teach or Suggest a Convergent Lens for Converging Light Emitted from the Light Emitting Element

In response to Applicant's arguments in the remarks dated June 24, 2003, the Examiner stated that "Serizawa discloses a lens provided on a sleeve for the purpose of gathering light and therefore altering the numerical aperture in the sleeve. ([0095], [0172])". *O.A. at page 4.* The Examiner further argued that although "Serizawa does not specifically disclose the convergent lens to create a smaller numerical aperture, Serizawa does disclose numerical aperture of the sleeve to be able to be altered and also the numerical aperture of the sleeve to match the numerical aperture of the fiber." *Id.* The Examiner indicated that by converging the light, the numerical aperture of the light is decreased to be less than the numerical aperture of the fiber, which would allow for the light to be incident to the fiber and therefore obtain an improved efficiency. *Id.* The Examiner argued that it "would have been obvious to one skilled in the art to have altered the numerical aperture for an improved efficiency." *Id.*

The Applicant submits that the Examiner failed to consider all words in Claim 1 when judging the patentability of the claim against the prior art. *See M.P.E.P. §2143.03.* More particularly, the Examiner did not provide a basis as to why Serizawa's disclosure of a "collimator lens" satisfies the "convergent lens" limitation recited in Claim 1. Neither Shirakawa nor Serizawa discloses a "convergent lens", as recited in Claim 1, and the portions cited by the Examiner do not teach or suggest a convergent lens, but relate to a "collimator lens."[1] *See Serizawa at para. [0095] and [0172].* The Applicant submits that there is no teaching or suggestion anywhere in Serizawa that its "collimator lens" is a "convergent lens for converging light emitted from the light emitting element so as to provide an incident numerical aperture smaller than the numerical aperture of said multimode optical fiber", as recited in Claim 1. Further, the Applicant directs the Examiner's attention to the ordinary and customary meaning of the term collimating or collimator lens, which generally means "a lens on a collimator used to focus light from a source near one of its focal points into a parallel beam."[2] The Applicant

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[1] The Applicant already alerted the Examiner of this very distinction between the collimator of Serizawa and the convergent lens of Claim 1. *See page 6 of Applicant's Remarks dated June 24, 2003*; the Examiner failed to address this distinction and continued the unfounded assumption that the collimator lens is a convergent lens in the present Office action.

[2] (emphasis added) (note the meaning of "collimate" is to "render parallel to a certain line or direction") "McGraw-Hill Dictionary of Scientific and Technical Terms", 3rd Ed., page 326 (1984); a copy of the pertinent page(s) is attached hereto.

submits that such a collimator lens may be characterized at best as a divergent lens, because the collimator lens diverges light from its focal point to parallel beams. In contrast, Claim 1 recites "a convergent light for converging light."

Thus, the Applicant submits that the Examiner failed to satisfy his burden of establishing obviousness, because the references when combined fail to teach or suggest all of the claim limitations. *See M.P.E.P. § 2143.* Here, the combination of teachings of Serizawa and Shirakawa clearly fails to teach or suggest all of the limitations of Claim 1, as required by law.

In view of the foregoing, there would have been no motivation in either Shirakawa or Serizawa to combine the teachings of the references and recognize the invention recited in Claim 1. Thus, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of these references to recognize the invention of Claim 1. Since Claims 2, 4 and 5 depend from Claim 1 above, the Applicant submits that those claims are allowable for at least the same reasons.

III. Discussion of Rejection of Claim 3 Under 35 U.S.C. § 103(a)

On page 3 of the Office Action, the Examiner rejected Claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Shirakawa in view of Serizawa as applied to Claim 1, and further in view of U.S. Patent No. 5,923,805 to Anderson et al. The Examiner does not allege that Anderson teaches the convergent lens as recited in Claim 1.

Since Anderson does not cure the deficiencies of Shirakawa and Serizawa, the Applicant submits that the combination of all 3 references fail to teach or suggest all of the limitations of Claim 1. As such, Claim 1 is allowable for at least the reasons discussed above. Since Claim 3 depends on Claim 1, the Applicant submits that Claim 3 is also allowable for at least the same reasons.

IV. CONCLUSION

Applicant has endeavored to address all of the Examiner's concerns as expressed in the Office Action. The Applicant submits that the claim limitations above represent only illustrative

distinctions. Hence, there may be other patentable features that distinguish the claimed invention from the prior art.

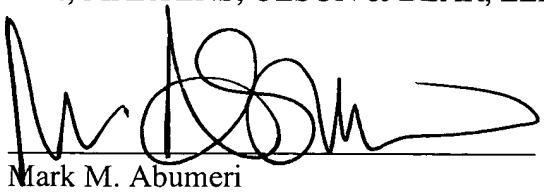
The Examiner is reminded that "whenever, on examination, any claim for a patent is rejected, or any objection ... made, notification of the reasons for rejection and/or objection together with such information and references as may be useful in judging the propriety of continuing the prosecution (35 U.S.C. 132) should be given." *M.P.E.P. § 707.* The Applicant submits that the Examiner's rejection of the claims, without citing to specific portion(s) of the above references that correctly support the Examiner's assertion, amounts to depriving the applicant of the opportunity to respond completely and with particularity as to why the claims are patentable. Thus, if the Examiner decides to sustain the rejection of the claims based on the same reference(s), the Examiner is requested to "clearly articulate any rejection early in the prosecution process so the applicant has the opportunity to provide evidence of patentability and otherwise respond completely at the earliest opportunity." *See M.P E.P. § 706.* If so, the Applicant should be entitled to have at least one opportunity to respond without having the burden of filing a request for continued examination (RCE).

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejections and, particularly, that all claims be allowed. If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully invited to call the undersigned.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,
KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: September 17, 2003

By: 

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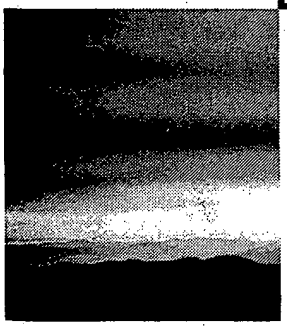

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In addition, material has been drawn from the following references: R. E. Huschke, *Glossary of Meteorology,* American Meteorological Society, 1959; *U.S. Air Force Glossary of Standardized Terms,* AF Manual 11–1, vol. 1, 1972; *Communications-Electronics Terminology,* AF Manual 11-1, vol. 3, 1970; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use,* 1st ed., National Aeronautics and Space Administration, 1965; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations,* Royal Aircraft Establishment Technical Report 67158, 1967; *Glossary of Air Traffic Control Terms,* Federal Aviation Agency; *A Glossary of Range Terminology, White Sands Missile Range, New Mexico,* National Bureau of Standards, AD 467–424; *A DOD Glossary of Mapping, Charting and Geodetic Terms,* 1st ed., Department of Defense, 1967; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms,* Bureau of Mines, 1968; *Nuclear Terms: A Glossary,* 2d ed., Atomic Energy Commission; F. Casey, ed., *Compilation of Terms in Information Sciences Technology,* Federal Council for Science and Technology, 1970; *Glossary of Stinfo Terminology,* Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms,* Bureau of Naval Personnel, 1962; *ADP Glossary,* Department of the Navy, NAVSO P-3097.

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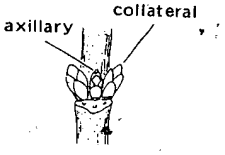
COLLARD

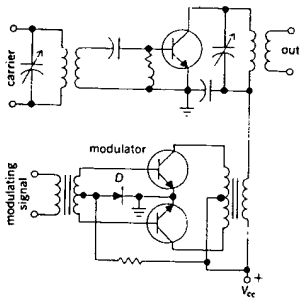
Collard (*Brassica oleracea* var. *acephala*).

COLLATERAL BUD



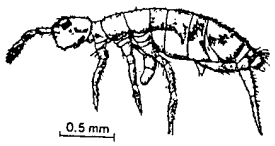
Collateral bud in a red maple.

COLLECTOR MODULATION



Circuit diagram of a collector-modulated transistor.

COLLEMBOLA



A collembolan, *Entomobrya cubensis*. (*From J. W. Folsom, Proc. U.S. Nat. Mus., 72(6), plate 6, 1927*)

ability to resist collapse from exterior pressure or internal vacuum.

collapse sink [GEOL] A sinkhole resulting from local collapse of a cavern that has been enlarged by solution and erosion.

collapse structure [GEOL] A structure resulting from rock slides under the influence of gravity. Also known as gravity-collapse structure.

collapsing pressure [MECH] The external pressure which causes a thin-walled body or structure to collapse.

collar [DES ENG] A ring placed around an object to restrict its motion, hold it in place, or cover an opening. [MIN ENG] The mouth of a mine shaft. [NAV ARCH] **1.** An opening in the end or bight of a rope or cable supporting a mast that goes over the masthead. **2.** A ring or loop of metal, rope, or other material, used to secure a heart or deadeye. **3.** A fitting over a structural part passing through a bulkhead or deck.

collar beam [BUILD] A tie beam in a roof truss connecting the rafters well above the wall plate.

collar bearing [MECH ENG] A bearing that resists the axial force of a collar on a rotating shaft.

collar cell *See* choanocyte.

collard [BOT] *Brassica oleracea* var. *acephala*. A biennial crucifer of the order Capparales grown for its rosette of edible leaves.

collared hole [ENG] A started hole drilled sufficiently deep to confine the drill bit and prevent slippage of the bit from normal position.

collar locator log [PETRO ENG] Down-hole nuclear-log measurement to locate drill-hole casing collars, usually for precise location of perforating points.

collar vortex *See* vortex ring.

collate [COMPUT SCI] To combine two or more similarly ordered sets of values into one set that may or may not have the same order as the original sets. [GRAPHICS] To assemble in proper sequence all the sheets, signatures, or insertions for a printed piece.

colla tempestade *See* colla.

collateral bud [BOT] An accessory bud produced beside an axillary bud.

collateral series [NUC PHYS] A radioactive decay series, initiated by transmutation, that eventually joins into one of the four radioactive decay series encountered in natural radioactivity.

collating sequence [COMPUT SCI] The ordering of a set of items such that sets in that assigned order can be collated.

collating unit [COMPUT SCI] An electromechanical device capable of performing singly or simultaneously the merging, sequence-checking, selection, and matching of punched cards. Also known as collator.

collator *See* collating unit.

collecting tubule [ANAT] One of the ducts conveying urine from the renal tubules (nephrons) to the minor calyces of the renal pelvis.

collection trap [ANALY CHEM] Cooled device to collect gas-chromatographic eluent, holding it for subsequent compound-identification analysis.

collective [METEOROL] In aviation weather observations, a group of observations transmitted in prescribed order by stations on the same long-line teletypewriter circuit. Also known as sequence.

collective bargaining [IND ENG] The negotiation for mutual agreement in the settlement of a labor contract between an employer or his representatives and a labor union or its representatives.

collective fire [ORD] Combined fire of various small arms concentrated on a given target or area.

collective motion [NUC PHYS] Motion of nucleons in a nucleus correlated so that their overall space pattern is essentially constant or undergoes changes which are slow compared to the motions of individual nucleons.

collective transition [NUC PHYS] A nuclear transition from one state of collective motion to another.

collector [ELECTR] **1.** A semiconductive region through which a primary flow of charge carriers leaves the base of a transistor; the electrode or terminal connected to this region is also called the collector. **2.** An electrode that collects electrons or ions which have completed their functions within an electron tube; a collector receives electrons after they have done useful work, whereas an anode receives electrons whose useful work is to be done outside the tube. Also known as electron collector. [ENG] A class of instruments employed to determine the electric potential at a point in the atmosphere, and ultimately the atmospheric electric field; all collectors consist of some device for rapidly bringing a conductor to the same potential as the air immediately surrounding it, plus some form of electrometer for measuring the difference in potential between the equilibrated collector and the earth itself; collectors differ widely in their speed of response to atmospheric potential changes.

collector capacitance [ELECTR] The depletion-layer capacitance associated with the collector junction of a transistor.

collector cutoff [ELECTR] The reverse saturation current of the collector-base junction.

collector junction [ELECTR] A semiconductor junction located between the base and collector electrodes of a transistor.

collector modulation [ELECTR] Amplitude modulation in which the modulator varies the collector voltage of a transistor.

collector plate [ELEC] One of several metal inserts that are sometimes embedded in the lining of an electrolyte cell to make the resistance between the cell lining and the current leads as small as possible.

collector resistance [ELECTR] The back resistance of the collector-base diode of a transistor.

collector ring *See* slip ring.

collector voltage [ELECTR] The direct-current voltage, obtained from a power supply, that is applied between the base and collector of a transistor.

Collembola [INV ZOO] The springtails, an order of primitive insects in the subclass Apterygota having six abdominal segments.

collenchyma [BOT] A primary, or early-differentiated, subepidermal supporting tissue in leaf petioles and vein ribs formed before vascular differentiation.

collenchyme [INV ZOO] A loose mesenchyme that fills the space between ectoderm and endoderm in the body wall of many lower invertebrates, such as sponges.

collenia [PALEOBOT] A convex, slightly arched, or turbinate stromatolite produced by late Precambrian blue-green algae of the genus *Collenia*.

Colles' fracture [MED] A fracture of the radius about 1 inch (2.5 centimeters) above the wrist with dorsal displacement of the distal fragment.

collet [DES ENG] A split, coned sleeve to hold small, circular tools or work in the nose of a lathe or other type of machine. [ENG] **1.** The glass neck remaining on a bottle after it is taken off the glass-blowing iron. **2.** Pieces of glass, ordinarily discarded, that are added to a batch of glass. Also spelled cullet. [HOROL] A small, friction-tight collar on a balance staff which holds the inner end of a balance spring. [LAP] The small, horizontal face at the bottom of a brilliant-cut gemstone.

Colletidae [INV ZOO] The colletid bees, a family of hymenopteran insects in the superfamily Apoidea.

colliculus [ANAT] **1.** Any of the four prominences of the corpora quadrigemina. **2.** The elevation of the optic nerve where it enters the retina. **3.** The anterolateral, apical elevation of the arytenoid cartilages.

2,4,6-collidine [ORG CHEM] $(CH_3)_3C_5H_2N$ A liquid boiling at 170.4°C; slightly soluble in water, soluble in alcohol; used as a chemical intermediate. Also known as 2,4,6-trimethylpyridine.

colliding-beam source [ELECTR] A device for generating beams of polarized negative hydrogen or deuterium ions, in which polarized negative hydrogen or deuterium atoms are converted to negative ions through charge exchange during collisions with cesium atoms.

colliery [MIN ENG] A whole coal mining plant; generally the term is used in connection with anthracite mining but sometimes to designate the mine, shops, and preparation plant of a bituminous operation.

colligative properties [PHYS CHEM] Properties dependent on the number of molecules but not their nature.

collimate [PHYS] To render parallel to a certain line or direction; paths of electrons in a flooding beam, or paths of various rays of a scanning beam are collimated to cause them to become more nearly parallel as they approach the storage assembly of a storage tube.

collimating lens [OPTICS] A lens on a collimator used to focus light from a source near one of its focal points into a parallel beam.

collimating sight [ORD] Sight equipped with a collimator,